Physical History

PRE-EUROPEAN (Pre-1776)

Before Europeans settled in San Francisco, the area was inhabited by Native American groups including the Miwok, in the area north of San Francisco Bay (today's Marin County), and the Ohlone, in the area south of San Francisco Bay (today's San Francisco peninsula). Then, as today, Alcatraz had a harsh environment –strong winds, fog, a lack of a fresh water source (other than rain or fog), rocky terrain –and there was only sparse vegetation, mainly grasses. These conditions were not conducive to living on the island. These groups may have used the island for a fishing station or they may have visited it to gather seabird eggs since the island did provide a suitable habitat for colonies of seabirds. However, the Miwok and Ohlone do not appear to have lived on Alcatraz or to have visibly altered its landscape, and no prehistoric archeological sites have been identified on the island. (Thomson 1979: 2, Delgado et al. 1991: 8, and Hart 1996: 4).

SPANISH AND MEXICAN PERIOD (1776-1846)

Early Spanish explorers into Alta California encountered the San Francisco Bay and its islands. (Jose Francisco Ortega saw the bay during his scouting for Gaspar de Portola's 1769 expedition, and Pedro Fages described the three major islands –Angel, Alcatraz, and Yerba Buena –in his journal from the subsequent 1772 expedition.) However, the first Europeans to record their visit to Alcatraz were aboard the Spanish ship San Carlos, commanded by Juan Manuel de Ayala that sailed through the Golden Gate and anchored off Angel Island in August 1775. The San Carlos' pilot, Jose de Canizares, surveyed and charted the bay, its shoreline, and islands. Alaya named the islands in the bay and bestowed the name "Isla de los Alcatraces" on an island that he described as "so arid and steep that there was not even a boat-harbor there; I named the island de los Alcatraces because of their [birds] being so plentiful there" (Thompson 1979: 3 and Hart 1996: 4). The map that was drawn from this survey labeled today's Yerba Buena Island as "Alcatraces." Then in 1826, a British Navy surveyor, Captain Frederick Beechey, secured permission from Mexican authorities to survey the bay. (Thompson 1979: 2-3 and Martini 1990: 11) For whatever reasons, he gave each island [Alcatraz and Yerba Buena] its present name and "thus they have been known ever since" (Thompson 1979: 5). (The name "Alcatraces" was traditionally translated as "Pelicans" but newer translations have indicated that that the word should be translated as "Cormorants" (Hart 1996: 4). The name has been spelled in a variety of ways over the years, among them Alcatraces, Alcatras, Alcatrace. The spelling of "Alcatraz" was adopted by the U.S. Coast Survey in the 1850s and by the U.S. Army in the mid-1860s. [Thompson 1979: 3])

Alcatraz was generally left unsettled and unexplored (Thompson 1979:1) –and hence unaltered –by the European population during the Spanish and Mexican periods. However, Alcatraz's strategic location, in relation to the defense and to the navigation of the bay, was recognized. The Spanish colonial government retained ownership and control of all coastal lands in California (including Alcatraz as an island in the San Francisco Bay). By the time that the Mexican government assumed control of California in 1822, "increasing seaborne trade in hide and tallow, and an expanding influx of Anglo-American settlers resulted in the territorial ambitions of the young United States becoming focused upon California" (Freeman 1999: 2-6). In 1838, "the Mexican government, fearful that foreigners might occupy some of these islands [in the bay], passed a law that authorized the governor of California to grant them to Mexican citizens" (Thompson 1979: 6).

On 30 April 1846, less than two months before the Bear Flag Revolt, Julian Workman, a naturalized

Mexican citizen, petitioned the governor for a grant to Alcatraz "which has never been inhabited by any person, nor used for any purpose" (Thompson 1979: 6). On 8 June 1846, Workman was granted the title to Alcatraz with the condition that he would establish a navigation light "as soon as possible" (Thompson 1979: 6) on the island. Workman did not do this and soon transferred the title to his brother-in-law, Francis P. Temple. John Fremont, who had appointed himself governor after the United States declared its control of California, took it upon himself to pay Temple $5,000 for Alcatraz. (Thompson 1979: 6-7) In 1848, at the end of the war with Mexico, the United States government declared that Alcatraz was federal property and "refused to recognize both Temple's claim to ownership of Alcatraz and Fremont's petition for reimbursement for its purchase. The government's explanation was that the original owner, Julian Workman, had never erected the lighthouse required of him, and that Fremont had never been empowered to make any such land purchases for the United States of America. All private claims [to Alcatraz] were null and void" (Martini 1990:13), and Alcatraz has remained the property of the federal government to the present-day.

U.S. MILITARY DEFENSE ERA: MASONRY FORTIFICATIONS (1847-1868)

Summary of History

1. Initial Survey of the Island

The United States recognized the military importance that control of the San Francisco Bay and harbor would have in maintaining its control of California, and "one of the first orders of government business was to survey the harbor for potential fortification sites" (Martini 2002: 6). Alcatraz was surveyed by military engineers in May 1847. (Thompson 1979: 10) The field map that was drawn from this survey noted that:

"This Island is chiefly composed of regularly stratified sandstone covered with a thin coating of guano. The stone is full of seams in all directions which render it unfit for any building purposes & probably difficult to quarry. The island has no beach & but two or three points where boats can land" (Warner 1847).

2. Gold Rush

At the time of the Army's survey, in 1847, less than 500 people lived in the small settlement of San Francisco, and "[t]he bay –and for that matter, the entire territory of California –offered little that would put the new American possession at risk from foreign attack" (Martini 2002: 6-7). However, after the discovery of gold in the Sierra foothills in January 1848, San Francisco quickly developed into a boom town, providing supplies and services to the thousands of individuals who arrived on ships, from all over the world, seeking their fortune in the California gold fields.

The number of ships entering the harbor increased dramatically during the Gold Rush. In 1849, 775 ships passed through the Golden Gate. The increase in the area's population, commerce, and wealth increased the strategic importance of San Francisco to the United State's claim to California and "had an immediate impact upon the need for the protection of the city and its maritime commerce" (Haller 1985: 8-2). San Francisco went from obscurity to being the "most valuable port in the world" (Martini 2002: 7). It was now a vital possession of the United States, and, as such, funding for the protection of San Francisco became a top priority.

Alcatraz's landscape remained untouched and unaltered during the Gold Rush period of 1848-1850.

However, the Gold Rush probably did impact the island. It is well documented that the bird nests on the Farallon Islands, located 26 miles offshore, were raided for eggs, a scarce frontier commodity. It seems likely that the nests of the birds on Alcatraz would also have been raided since the island, located within the bay, could have been easily reached. (Delgado et al. 1991: 9) This disruption of the bird's habitat would continue with the subsequent construction of the light house and fortifications on the island in the 1850s.

3. Alcatraz Lighthouse

Alcatraz's location and the height of its landform made it a landmark that could be used for navigation, and as such was an appropriate site for the placement of a navigation light. Alcatraz was included as one of the eight lighthouses for the Pacific Coast that Congress included in its 1850 appropriation. (The Fort Point [1855] and Farallon Islands [1856] lights were also included in this appropriation, and a separate local contractor was hired to build the Point Bonita Light [1855]. [Gibbs 1986: 18]) Construction of Alcatraz's lighthouse began on 15 December 1852, and the lighthouse was placed into operation on 1 June 1854. The Alcatraz lighthouse was the first major structure to be built on the island and was the first lighthouse on the West Coast.

The lighthouse was located on the south crest of the island. "By lining up Alcatraz's light with the one at Fort Point, [completed in 1855] pilots could bring vessels over the dangerous San Francisco Bar" (Haller 1985: 8-3). In 1856, a fog bell was installed on the edge of the bluff on the island's south side to further aid navigation. (Haller 1985: 8-5)

4. Development of Earthen Fortifications (1853-1859)

The Joint Board of Military Engineers and Naval Officers (Pacific Coast) was established by Congress in 1849 to review the conditions along the Pacific Coast and to make recommendations for its defense. In its final report, submitted on 1 November 1850, the commission recommended that fortifications be built at Fort Point, Lime Point, and Alcatraz to protect the Golden Gate. Five days later, and in fact before he had even read the commission's final report, President Fillmore signed an Executive Order on 6 November 1850 that reserved Alcatraz for public use. (Thompson 1979: 10-12)

Alcatraz's location was ideal from the viewpoint of contemporary military defensive strategies and capabilities. The guns of the day had an accurate range of about one and a half miles and could "direct annoying fire" (Thompson 1979: 14) at a range of up to two miles. Alcatraz was located within that distance of the Golden Gate, San Francisco, and all of the approaches by the bay into the city's port. Military engineers reported back to Washington after surveying Alcatraz in 1852 that:

"Nature seems to have provided a redoubt for this purpose in the shape of Alcatraz Island –situated abreast the entrance directly in the middle of the inner harbor, it covers with its fire the whole of the interior space lying between Angel Island to the North, San Francisco to the South, and the outer batteries to the West. It is just three miles from each of the Entrance forts [of Fort Point and Lime Point] and consequently takes up the fire dropped by them at the 1-1/2 mile range. A vessel passing directly to San Francisco must pass within a mile [of Alcatraz]; and the center of the city is about two miles distant. A vessel approaching the city from the north by the Riley channel [east of Angle Island] must pass within two miles of Alcatraz –thus the main object of preventing an anchorage in the harbor within range of the town may be accomplished from this position and Rincon Point" (Thompson 1979: 15).

Alcatraz's physical characteristics only added to its desirability:

"The Island presents natural advantages for the site of a battery –The walls are already mostly scarped by nature in the solid rock. A slight degree of blasting would complete this part of the work, & the battery may at once to placed at a suitable height upon the top of the Island" (Thompson 1979: 15).

During this initial phase of development (1853-1859), the island was modified to meet the needs of the 1852 fortification plans. The 1852 plans for Alcatraz were a part of the United State's Third System of fortifications. This system was a strategic doctrine for "building the infrastructure of a unified defense network" (Freemen 1999: 2-8) for the nation's seacoasts and called for "large brick or stone forts with multiple tiers of gun batteries . . . built on promontories and on islands at choke points to important harbor entrances" (Freeman 1999: 2-9). The 1852 plan for Alcatraz consisted of modifying the existing topography so that it would better serve the defensive purposes of the fort; constructing batteries for guns; and building the infrastructure to support the operations of the fort: a wharf, a road to connect the wharf and batteries, a guard house to protect access to the island from the road, buildings for support facilities, and barracks to provide living quarters for soldiers.

Actual work on the fortifications at Alcatraz began in the summer of 1853, and, although the construction of the lighthouse had begun the previous winter, this marked the real beginning of the modifications to the island's landscape. The work was directed by 1st Lieutenant Zealous Bates Tower. The construction of the fortifications continued through the end of 1859, and on 30 December 1859, the post was garrisoned, and the "first troops took up residence in the newly completed Citadel" (Thompson 1979: 203). The start of the Civil War halted any major construction on Alcatraz (Thompson 1979: 87) and ended this initial phase of the development of the military landscape at Alcatraz. The defense of San Francisco was a low priority throughout most of the Civil War (Martini 1990: 49), and the work that continued was minor. Major construction at Alcatraz did not begin again until after the end of the Civil War, when the redesign of the masonry batteries would turn into a "full-scale rebuilding" (Freeman 1999: 2-16) of the island to conform to newer military requirements.

Changes to the Cultural Landscape (1853-1859)

1. Summary

Before 1853, Alcatraz could be described as follows:

"The shores were irregularly shaped, with the prominent landmarks being the point at the northern end, a small cove, later named 'Pirates Cove,' close to the tip but on the windward shore, and another small cove on the leeward shore, close to the southern tip of the island. Alcatraz was originally 1,705 feet long, with its widest point measuring 580 feet across. Two low, rounded peaks on the island had elevations of 134.9 and 138.4 feet respectively. The southeast end gradually sloped to the water, while at the northwest end, the cliffs climbed from 10 to 120 feet above the water in a hundred yard distance. The east and west shores were more precipitous, rising 50 feet straight up from the water on the west side before climbing another 80 feet in less than a hundred yards. The eastern side climbed 20 feet straight from the waves, and then steeply angled to a 130 foot summit within a hundred yards of the shore" (Delgado et al. 1991: 9).

The changes to the cultural landscape features on the island during this initial phase of development were directly related to modifying the island in order to construct the masonry fortifications and the army post. The Army modified the existing topography in order: to construct a roadbed; to create a large level plateau on the top of the island; to create the linear level areas or platforms that were required for the construction of the batteries; and to alter smaller areas of the island's slopes to accommodate the construction of the support buildings and structures. Because Alcatraz was basically rock with very little

soil to grade, the only way to create these level areas was to cut or blast away the rock.

The basic features of the island during this period consisted of : a wharf on the southeast end of the island; a road system that connected the different levels (and built features) of the island; a level plateau on the summit of the island where the Alcatraz lighthouse, Citadel, parade ground, and engineer's office were located; batteries, one at each end of the island; support buildings and structures located along the east side of the island; a second cluster of support buildings and structures located on the southwest slope of the island between the top summit (above) and the south batteries (below). (Thompson 1979: 24-36)

The fortifications (batteries, guardhouse, and Citadel) were masonry (built of brick and stone). The support buildings were wood-frame and were meant to be temporary; however, most of them remained as permanent features on the island through the end of the 19th century and into the early 20th century.

During this initial period of development, Alcatraz lacked the types of vegetation features that would normally be found on an army post –native plant communities, areas used for grazing, vegetable gardens or orchard, or ornamental vegetation. The additions of garden areas and the introduction of new ornamental plants to the island –alterations that would soften the harsh environment of the island and make it more livable for residents –did not begin until the 1860s, after the basic facilities of the Army post had been constructed.

The following sections provide a more detailed description of the key cultural landscape features on the island during this period.

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2. Topographic Modifications on the Summit and Construction of the Citadel, Lighthouse, and Engineer's Office

The two rounded peaks of the island were altered by blasting to create a large level plateau that sloped down slightly from south to north. The south peak was reduced from its original height of 138.4 feet to about 134 feet, and the north peak was reduced from its original height of 134.9 feet to about 131 feet. The shallow depression between the two peaks was filled with the rock that was removed. (Warner 1847, Ernst 1867, Thompson 1979: 69)

The company barracks, known as the Citadel, was built on the north end of this new plateau. From this height, sentries had an unobstructed view of the waters surrounding Alcatraz, and the entire perimeter of the island could be defended. The Citadel was a "solid, massive, defendable building that could withstand not only an infantry assault, but most of the naval armament of the day" (Thompson 1979: 64). The Citadel, sitting on the top of the island, became the most visible building on Alcatraz.

The Citadel was located in the center of a dry moat, an excavated pit, 150 feet by 75 feet. Martini described this feature in Fortress Alcatraz:

"This recess, lined with brick, formed a dry moat or ditch, and the three-story Citadel itself was erected in the middle of the ditch. The only entrance to the barracks was across two drawbridges spanning the moat, providing access to the second story. The exterior counter scarp walls of the moat were hollowed out for privies, storerooms, and water cisterns" (Martini 1990: 27).

The cisterns were located on the southeast wall and had a combined capacity of 54,000 gallons. They augmented the 23,000-gallon, wood, water tank located at the wharf area. (Delgado et al. 1991: 23) The expanse of ground to the north of the Citadel was used as a parade ground. The wood-frame engineer's office was located on the north end of the plateau. (Thompson 1979: 69)

Alcatraz's brick, Cape Cod-style lighthouse was located at the south edge of this plateau, just south of the Citadel. (The United States Lighthouse Board used one standardized plan for the construction of these first western lighthouses –a Cape Cod-style dwelling with a short tower thrusting up through the center of the roof; this arrangement allowed the keeper to service the light without venturing out into damp, foggy, and cold conditions. [Jones 1993: 6] This design was developed by Ammi B. Young, a prominent nineteenth-century architect. [Holland 1972: 155]) The Alcatraz light was a Third Order Fresnel lens with steady white light. It was used in conjunction with the light at Fort Point to guide ships into the port of San Francisco. (Thompson 1979: 459).

3. Topographic Modifications Related to the Construction of the Masonry Fortifications

The natural topography of the upper slopes was altered by blasting to remove rock in order to create level platforms. Sandstone and brick "scarp walls" were constructed on the outside slopes of these terraces. These high retaining walls reinforced the protection of the perimeter of the island and, more importantly, held in place the island's rock that was prone to crumble and slide. The batteries of guns were mounted on the level areas behind the scarp walls.

There was a Barbette or open battery on the north end of the island that worked in conjunction with Angel Island to protect the north passage around the island. There was another Barbette battery on the south end of the island that extended around the west side that protected the Golden Gate and the south passage around the island to the port of San Francisco. On the northeast end of the island, the north caponier, a masonry tower, rose several stories above the masonry wall of the battery and held smaller guns. On the southwest end of the island, there was a similar structure –the south caponier.

4. Topographic Modifications and the Construction of a Wall Along the Shore

The rocky shores that surrounded the base of the island were modified by blasting away the "gentler slopes" to create steep cliffs with a "perpendicular height of 25 feet all around" (Thompson 1979: 16). This was done to prevent enemy landings around the perimeter of the island.

5. Construction of the Wharf

Transportation to and from the island was solely by water, and the construction of a wharf was needed to allow boats to dock at the island. Due to the current, tide, fog, and physical layout of the island, the only real location for a wharf was on the southeast end of the island, and a wharf was built there in 1853, out of sight from the Golden Gate and protected from prevailing winds. This was the only access point on the island.

6. Topographic Modifications Related to the Construction of the Roads and Building Clusters

The fortifications and support facilities of the post were reached via a system of roads that began at the wharf. In order to build the roads, the existing rocky slopes were blasted to create the roadbed. The rock on the sides of the roadbed was not stable, and brick retaining walls were built along the both sides of the road (to stabilize the hill on the west side of the road and to stabilize the east side of the roadbed). Construction of the main road began in the late summer of 1853, and by October, the roadbed from the wharf to the guardhouse had been blasted. The roads that were built basically followed the alignment of the today's roads.

The main road began at the wharf and continued in a northwest direction, uphill, and through the

guardhouse. The guardhouse was built over the road, and the guardhouse had a dry moat surrounding it. The road passed through the guardhouse on a wood drawbridge that spanned the moat. In case of attack, the drawbridge could be lifted and the guardhouse closed so that access to the batteries could be controlled.

Between the wharf and the guardhouse, a row of wood-frame buildings (that housed support facilities such as the boathouse; 23,000-gallon, wood, water tank; engineer storehouse, quartermaster store; coal shed; and sutler's store) were located on the narrow strip of land between the east side of the road and the edge of the island.

Above the guardhouse, the road divided at the first of three switchbacks. Part of the road continued to the northwest, along the east side of the island, to provide access to batteries (Battery Halleck, the North Caponier, and Battery Rosecrans) that were located around the northern end of the island.

The main part of the road continued around the first switchback and up the slope.

At the second switchback of the main road, the road again divided. (A secondary road continued southwest to the south end of the island.) The main road continued up the slope. To the north of the third switchback on the main road were a row of three quarters for Noncommissioned Officers (NCO) that was located next to the hillside (today this area is referred to as the Water Tank area). The main road ended on southeast side of the uppermost level of the island where the Citadel and lighthouse were located.

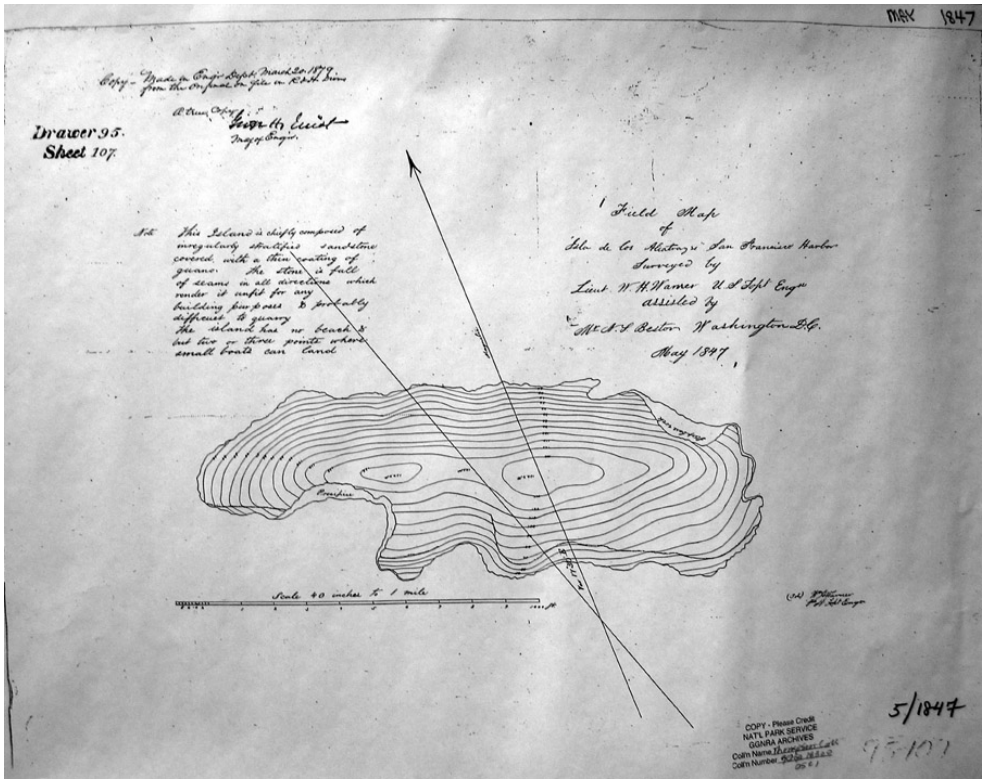
The secondary road that began at the second switchback of the main road continued around the south end of the island. This road provided access to a group of wood-frame buildings (two temporary barracks, laundry quarters, stable, engineers' quarters, commissary stores, carpenters shop, ordinance stores, and privy) located on the slope on the southwest side of the island.

On the northwest side of this group of buildings, the road split into two branches. One branch continued north along the west side of the island and provided access to the batteries along the west side (Batteries Tower, Stevens, and Mansfield). The other branch of the road provided access to a lower level of the south end of the island, where Battery McClellan, the South Caponier, and Battery Prime were located.

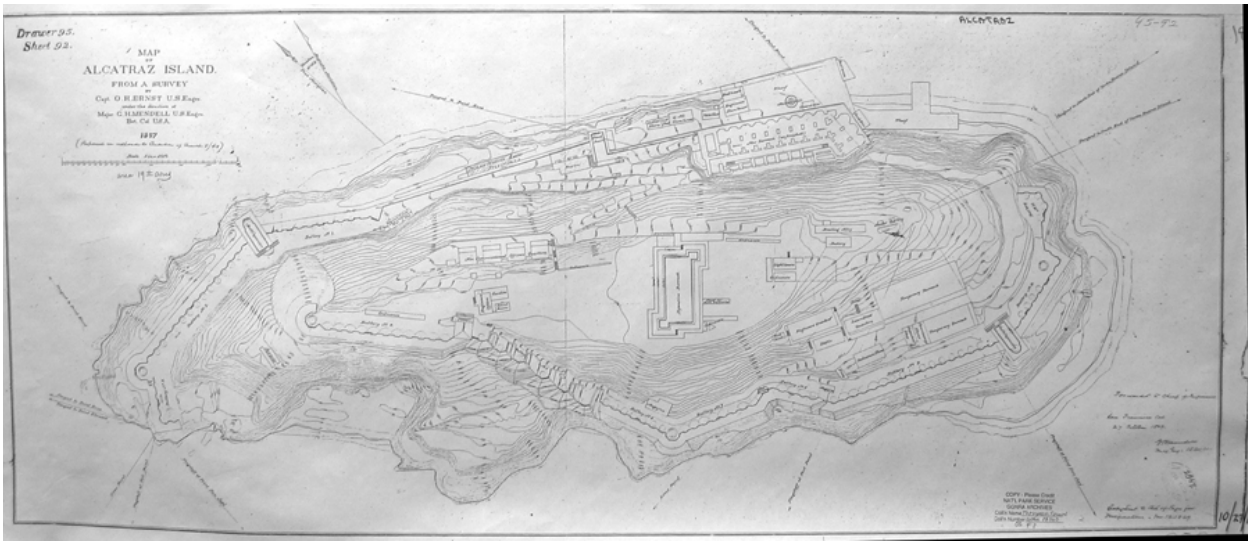
7. Vegetation Features

To 19th century eyes, Alcatraz was considered a "barren" island. No one lived there. The island only had a "thin deposit of native soil that supported native grasses and shrubs," (Delgado et all. 1991: 9) and the colonies of birds on the island –so numerous that the island was sometimes called the "White Island" in reference to the guano deposits that covered its slopes –were considered a nuisance. The native plant communities that did exist were probably adversely affected (and possibly eliminated) by the blasting and building during this initial phase of construction (1853-1859).

Alcatraz did not have areas that could be used for grazing animals, and it did not have the areas devoted to growing food to supplement the post's diet (such as fruit tree orchards or vegetable gardens) The terrain and growing conditions at Alcatraz were not conducive to either of these land uses. (The post's soldiers maintained a vegetable garden on Angel Island in a "sheltered valley near Pt. Blunt" [Martini 1990: 44].) The addition of garden areas and the introduction of new ornamental plants to the island –alterations that would soften the harsh environment of the island and make it more livable for residents –began in the 1860s after the basic facilities of the Army post had been built on the island.



Field Map of Isla de los Alcatrazes, San Francisco Harbor, Surveyed by Lieut. W. H. Warner U. S. Topo. Engr. Assisted by Wm. N.L. Beston, Washington D.C., May 1847 See Supplemental Information for an 11 x 17" copy.



Map of Alcatraz Island From A Survey By Capt. O.H. Ernst U.S. Engrs. under the direction of Major G.H. Mendell U.S. Engrs. Bvt. Col. USA 1867. See Supplemental Information for larger copy.

U.S. MILITARY DEFENSE ERA: EARTHEN FORTIFICATIONS (1868-1907)

Summary of History

1. Alcatraz's Fortifications

As a result of battle experiences during the Civil War, the Board of Engineers for Fortifications concluded that:

"Only large rifles and 15-inch Rodman smoothbores were effective against armored vessels, that masonry works were vulnerable to such weaponry, and that earthwork barbette batteries were not only the most resistant to such fire but also the most cost-effective to build. As a result, major changes to the seacoast defenses of San Francisco Bay were implemented in the period immediately following the Civil War, under the scheme known as the Plan of 1870" (Freeman 1999: 2-16).

At Alcatraz, this meant that the existing stone and brick batteries were now considered obsolete. As described by John Martini in his history, Fortress Alcatraz:

"The most serious shortcomings in Alcatraz's [pre-Civil War] design had been dictated by the island's topography. Steep slopes of natural rock backed nearly all of the batteries, and the Army's senior engineer for the Pacific Coast concluded that any projectile hitting these cliffs would shower gun emplacements and artillerymen with a devastating hailstorm of rock splinters. He speculated officers wouldn't be able to force soldiers into these batteries during battle" (Martini 1990: 62).

"The new thinking required that guns be set in wide spaces and protected not by rigid walls but by mounds of soft, absorbent earth" (Hart 1996: 9) that would absorb the force of the incoming ordinance. Given Alcatraz's rocky terrain, the Pacific Board, of the Board of Engineers for Fortifications, noted that: "A satisfactory solution seems to found only in extending the available area by excavation" (Thompson 1979: 157).

The redesign of the fortifications on Alcatraz began in 1868 under the direction of Major George Mendell of the Corps of Engineers. "Mendell's recommendation for Alcatraz was simple and awesome: level the peaks and slopes of the island, spread the resulting spoil in front of the old scarp walls, and ring the island with Rodman guns and Parrott rifles in earthwork batteries" (Martini 1990: 62-63). According to this plan, 430,000 cubic yards of rock would need to be removed at a cost $215,000. (Thompson 1979: 157). Mendell's plan was forwarded to the Chief of Engineers and then to the Board of Engineers for Fortifications in Washington for review in March (Thompson 1979: 158). It was approved, after discussions with Mendell in December, and reflected the new nationwide standard for battery design and armament that became known as the Plan of 1870. (Martini 1990: 66)

Mendell proposed to defray the high costs associated with the excavation and construction by using the inmates at the military prison as the workforce. (Thompson 1979: 157) A military prison had been established at Alcatraz in 1861, and in 1869, there were between 90 to 125 prisoners on the island. While he was waiting for the approval and funding from Washington for his plan, Mendell began the task of cutting back and leveling the steep slopes at the north end of the island using a work force 30 to 50 military prisoners. (Thompson 1979: 158 and Martini 1990: 64) These men used picks, shovels, and wheelbarrows to remove the rock and then dump it over the walls in front of the existing batteries. As an incentive, the sentences of prisoners who earned a "good reputation as laborers" were commuted. (Thompson 1979: 159 and Martini 1990: 64). However, the use of military prisoners proved to be less than satisfactory to Mendell who noted that after six months of work: "The men are not industrious and

they are careless and at times malicious in their treatment of public property but with all of these drawbacks there is some profit in employing them" (Thompson 1979: 159). The practice of using prison labor continued for the remaining 64 years that the Army occupied the island, and the inmates were responsible for most of the construction work that was done on the island during this time.

Work on the redesign of the batteries was suspended in 1876 due to the nationwide reduction of military spending. By 1876, "Alcatraz stood only partially complete as fortress. A mere five guns were mounted on the entire post (106 fewer than a decade before), and little more than initial excavation work had been carried out on the six earthwork batteries planned for the southern sides of the island" (Martini 1990: 76). Although, Alcatraz continued to officially be a part of San Francisco's coastal defenses for another 30 years, by 1876, Alcatraz's utility as a seacoast fortification was for all intents and purposes over.

In 1885, a special board, eventually known as the Endicott Board after its chairman, Secretary of War William Endicott, was established by President Cleveland to make recommendations for the future of the seacoast defense system. These recommendations were based on the advances in military technology over the past 15 years (that is since the implementation of the Plan of 1870). These modernization plans for San Francisco's seacoast included the "great extension of the outer line of defenses to points well beyond the harbor entrance proper, in reflection of the ten- to twelve-mile range of the new artillery pieces" (Freeman 1999: 2-20). In other words, the first line of defense was now well outside the harbor, and Alcatraz, located inside the harbor, was no longer strategically placed in relation to the new defensive strategies. New high power guns were proposed for Alcatraz, as part of the inner defense of the harbor, but these were never funded. "San Francisco Harbor already had a great deal of heavy armament emplaced" (Thompson 19979: 201), and the modernization of Alcatraz's defenses was not a high priority.

2. Alcatraz's Prison

Alcatraz was designated as the official military prison for the entire Department of the Pacific on 27 August 1861. During the Civil War, the number of prisoners at Alcatraz ranged from 15 to 50 men, and although the number of prisoners on the island varied over the next forty years, the Army's investment in and need for the prison increased while that of the defensive fortifications on the island decreased. After the funding for fortifications ended in 1876, the buildings constructed during the next 30 years related to the operations of the post or prison rather than to defense.

During the Spanish-American War, all military prisoners returning from service in the Philippines were sent to the prison at Alcatraz, and the prison population went from 25 during the summer of 1899 to 441 in April 1900. (Thompson 1979: 223) The Upper Prison, a collection of wood-frame buildings constructed on the new parade ground area on the south side of the island, was built in 1900 and expanded in 1904, to handle the exploding prison population from the Spanish-American War. However, this complex and the collection of buildings of the Lower Prison were considered "temporary" structures. The Army needed a modern, permanent military prison and by 1903 was considering sites, including Alcatraz, in the Bay Area. (Thompson 1979: 200 and Martini 1990: 90-91) "In 1907, the War Department made a final decision regarding the future of Alcatraz. No longer would the island be designated as a harbor-defense fort . . . The island was removed entirely from the control of the Department of the Pacific" (Martini 1990: 95). On 21 March 1907, Alcatraz was redesignated the Pacific Branch, U.S. Military Prison, Alcatraz Island.

Changes to the Cultural Landscape (1868-1907)

1. Summary

The changes to the cultural landscape features that occurred after the Civil War and through 1907 were related to the construction of earthen fortifications based on the Plan of 1870 specifications and to the operational requirements of the army post and military prison.

The basic features and spatial organization of the island remained from the pre-Civil War landscape: a wharf on the southeast end of the island; the road system that connected the different levels (and built features) of the island; and a level plateau on the summit of the island where the Alcatraz lighthouse, Citadel, parade ground, and engineer's office were located. Major excavation projects were undertaken to widen the battery platforms and to add soil to the front of the batteries. There were batteries, on the north, south, and west sides of the island, located on terraces below the top summit. The support buildings and structures located along the east side of the island were expanded, and the Lower Prison complex expanded into this area. Most of the cluster of "temporary" wood-frame support buildings and structures, located on the southwest slope of the island between the top summit (above) and the south batteries (below) remained. A new terrace, known as the Parade Ground, was created on the south end of the island, and the wood-frame buildings of the Upper Prison were built here.

By the 1860s, the people who lived on Alcatraz had started creating small gardens. Both public and private planting beds and garden spaces were added to the landscape of Alcatraz during this era. "By 1870, Alcatraz had acquired the appearance of a settled, permanent military post" (Thompson 1979: 210), and, as John Martini pointed out in Fortress Alcatraz, the island resembled "a pleasant but unplanned western village" (Martini 1990: 96).

By 1890, the original topography of the island had been modified to the extent that "nearly every square yard of ancient island surface had either been cut away or buried in fill" (Hart 1996: 10), and the basic topography of the island that exists today was in place. The original rounded or humpback look of the island was gone, and the topography was taking on the blocky appearance that exists today.

The following sections provide a more detailed description of the key cultural landscape features on the island during this period (1868-1907).

2. Construction of the Earthen Fortifications

The pre-Civil War topography of the island was modified in order to implement Mendell's plan for the new earthen fortifications. Work included reshaping the north (for batteries 1, 2, 3, 4, 5) and south (for batteries 11, 12, 13) ends of the island; lowering the area of Battery 5 by removing 30 feet of rock; making a cut from Battery 5 (on the northwest side of the island) through to the northeast (in vicinity of the present-day morgue); constructing a 180-foot-long tunnel from the North Caponier to Battery 4. Work was undertaken on Batteries 1-5, 7, 10-12 and on the North and South Caponiers. (Thompson 1979: 163, 167, 174-176, 178, 179) Between 1879 and 1890, the south-facing slopes between the Citadel and the area of Batteries 10 and 11 was reduced from a height of 125 feet, at its summit, down to 60 feet and a large level area was created. (Martini 1990: 76-77and Thompson 1979: 182)

The spoils from the excavations that were dumped over the sides extended and altered the island's shores. Pirates Cove, on the northwest side of the island, was partially filled. On the south end, the spoils covered the 1850s stone defensive walls and the remains of the South Caponier and filled in the small "nooks and crannies on the shoreline at the southern end" (Delgado et al. 1991: 11). This gave the south face of the island a more uniform semi-circular appearance. (Thompson 1979: 182; Martini 1990: 67, 76-77)